Journal of Testing and Evaluation
Author Index
Volume 22, 1994

Number	Month of Issue	Pages
1	January	1–90
2	March	91–182
3	May	183–290
4	July	291–400
5	September	401–504
6	November	505–608

A

Adams, DF: *see* Odom, EM and Adams, DF

Ajayi, JO
and Elder, HM: Comparative studies of yarn and fabric friction, Sept., 463
and Elder, HM: Objective evaluation of surface characteristics to determine smoothness of pile fabrics, July, 388

Al-Bastaki, NMS: Effect of high strain rate on the properties of PVC pipe, Nov., 574

Albright, FJ
and Annala, J: Practical aspects of dynamic verification of extensometers: Part I—The concepts, Jan., 53
and Annala, J: Practical aspects of dynamic verification of extensometers: Part II—Actual examples, Jan., 58

Anabtawi, MZ and Nazzal, JM: Effect of composition of El-lajjun oil shale on its calorific value, March, 175

Annala, J: *see* Albright, FJ and Annala, J

B

Baaklini, GY: *see* Cios, KJ, Baaklini, GY, Vary, A, and Tjia, RE

Bajere, PA: Review of *Handbook of Adhesive Bonded Structural Repair* (Wegman and Tullos), Sept., 500

Bank, LC: *see* Svenson, AL, Hargrave, MW, Bank, LC, and Ye, BS

Beghini, M, Bertini, L, and Raffaelli, P: Numerical analysis of plasticity effects in the hole-drilling residual stress measurement, Nov., 522

Bellingar, T: *see* Slaten, BL, Shanley, LA, and Bellingar, T

Bertini, L: *see* Beghini, M, Bertini, L, and Raffaelli, P

Bhattacharja, S: *see* Todres, HA and Bhattacharja, S

Bhattacharya, S and Kumar, AN: *R*-curve generation and CTOD evaluation considering maximum crack growth size and parabolic crack front, Jan., 20

Bodig, J: *see* Pellicane, PJ, Bodig, J, and Mrema, AL

Böhme, W: *see* Sharpe, WN, Jr. and Böhme, W

Borisenko, VA: *see* Troyanskii, AI and Borisenko, VA

Bouisset, J-F: Security technologies and techniques: airport security systems, May, 247

Brown, SR: *see* Gaskin, GB, Pilla, GJ, and Brown, SR

Budinski, KG: Scoring of precision spur gears, Sept., 485

Burdette, J: *see* Larralde, J, Silva-Rodriguez, R, Burdette, J, and Harris, B

C

Carey, RF: Differential air deflation quality assurance test for surgical gloves, Sept., 440

Cartwright, N: Reaching consensus on technical standards through ICAO: the work of ad hoc group of specialists on the detection of explosives, May, 277

Cavaleiro, A: *see* Trindade, AC, Cavaleiro, A, and Fernandes, JV

Changizi, K: Computer method of analysis for tire wear characterization, identification, and classification, Jan., 45

Chawla, KK: *see* Wolfenden, A, Gill, JE, Chawla, KK, Vaidya, RU, and Venkatesh, R

Cios, KJ, Baaklini, GY, Vary, A, and Tjia, RE: Radial basis function network learns ceramic processing and predicts related strength and density, July, 343

Cooper, PM: *see* Roebuck, B, Lord, JD, Cooper, PM, and McCartney, LN

Coudert, EM: *see* Murakami, Y, Toriyama, T, and Coudert, EM

Criado, AJ: *see* Martínez, JA, Kugler, HP, Merino, S, Drude, H, and Criado, AJ

D

Dauskardt, RH: *see* Gilbert, CJ, McNaney, JM, Dauskardt, RH, and Ritchie, RO

DeNale, R: Review of *Nondestructive Testing Techniques* (Bray and McBride), Sept. 501

Dolan, JD: Proposed test method for dynamic properties of connections assembled with mechanical fasteners, Nov., 542

Draghetti, PM: Aviation security standards development within ASTM Committee F-12 on Security Systems and Equipment, May, 275

Drude, H: *see* Martínez, JA, Kugler, HP, Merino, S, Drude, H, and Criado, AJ

E

Earthman, JC: *see* Johnson, NL and Earthman, JC

El-Korchi, T: *see* Toutanji, HA and El-Korchi, T

Elder, HM: *see* Ajayi, JO and Elder, HM

Elias, L: Development of trace explosive detection standards, May, 280

Engel, PA: *see* Milligan, HL, Johnson, BM, and Engel, PA

F

Faucher, B: Crack length and *J*-integral expressions for specimens loaded in tension, Jan., 30

Feng, X: *see* Kumar, AM, Hirth, JP, Hoagland, R, and Feng, X

Fernandes, JV: *see* Trindade, AC, Cavaleiro, A, and Fernandes, JV

Field, DP
Sample, VM, and Rader, RS: Determination of softening kinetics in a material by measuring the evolution of hot flow stress, Nov., 530
see Sample, VM and Field, DP

Fishman, KL and Machmer, D: Testing techniques for measurement of bulk modulus, March, 161

Forbes, D: Need to harmonize cargo security rules, May, 265

Fwa, T-F: *see* Tan, S-A, Low, B-H, and Fwa, T-F

G

Ganesan, AR: *see* Sivaganthan, J, Ganesan, AR, Tan, BC, Low, KS, and Sirohi, RS

Gaskin, GB, Pilla, GJ, and Brown, SR: Preparation of stainless steel adherends for adhesive bonding, May, 222

Gilbert, CJ, McNaney, JM, Dauskardt, RH, and Ritchie, RO: Back-face strain compliance and electrical-potential crack length calibrations for the disk-shaped compact-tension DC(T) specimen, March, 117

Gill, JE: *see* Wolfenden, A, Gill, JE, Chawla, KK, Vaidya, RU, and Venkatesh, R

Green, HJ: Physiologic challenges induced by participation in ice hockey—implications for training, Jan., 48

H

Häberle, JG and Matthews, FL: Influence of test piece preparation on the compressive strength of unidirectional fiber-reinforced plastic, July, 360

Hargrave, MW: *see* Svenson, AL, Hargrave, MW, Bank, LC, and Ye, BS

Harris, B: *see* Larralde, J, Silva-Rodriguez, R, Burdette, J, and Harris, B

Harvey, J, Mills, T, Scheffy, C, Sousa, J, and Monismith, CL: Evaluation of several techniques for measuring air-void content in asphalt concrete specimens, Sept., 424

Henshell, J: Review of *Design and Analysis of Single-Ply Roof Systems* (Phalen), May, 287

Hillberry, BM: *see* McKeighan, PC and Hillberry, BM

Hirsch, DB: *see* Rodak, EM, Taylor, RJ, Hirsch, DB, and Linley, LJ

Hirth, JP: *see* Kumar, AM, Hirth, JP, Hoagland, R, and Feng, X

Hnatnicky, S: Selection and use of explosives detection devices to check hand-held luggage, May, 282

Hoagland, R: *see* Kumar, AM, Hirth, JP, Hoagland, R, and Feng, X

J

Jin, L-Z and Sandström, R: Evaluation of machinability data, May, 204

Johnson, BM: *see* Milligan, HL, Johnson, BM, and Engel, PA

Johnson, NL and Earthman, JC: Numerical model of primary creep deformation in a novel double shear specimen, March, 111

Joy, TJC: Reconciling passenger facilitation and security, May, 245

K

Kamat, SV: *see* Srinivas, M, Kamat, SV, and Rao, PR

Kaneshiro, H: *see* Makabe, C, Kaneshiro, H, and Yara, H

Kang, ZQ, Li, JB, and Wang, ZG: Stress correction for removal of material in X-ray stress determination, May, 217

KarisAllen, KJ and Matthews, JR: Determination of single edge-notched bend specimen load line displacement from remotely located sensors in elastic-plastic fracture testing, Nov., 581

Kashef, AE:
Review of *Reliability Methods for Engineers* (Krishnamoorthi), July, 397
Review of *Total Engineering Quality Management* (Cottman), July, 397

Kim, YR: *see* Whitmoyer, SL and Kim, YR

Klanner, F: *see* Pippan, R, Plöchl, L, Klanner, F, and Stüwe, HP

Kobayashi, T, Shockey, DA, Ogundele, G, McNabb, DD, and Sidey, D: Deducing crack history in an aged boiler tube from fracture surface topography, July, 309

Koch, A: Role/responsibility of the freight forwarder, May, 259

Kugler, HP: *see* Martínez, JA, Kugler, HP, Merino, S, Drude, H, and Criado, AJ

Kumar, AM, Hirth, JP, Hoagland, R, and Feng, X: Suggested test procedure to measure Mixed Mode I-III fracture toughness of brittle materials, July, 327

Kumar, AN: *see* Bhattacharya, S and Kumar, AN

L

Laird, DR: Regulation: perception and reality, May, 240

Landes, JD: *see* Wilson, CD and Landes, JD

Larralde, J, Silva-Rodriguez, R, Burdette, J, and Harris, B: Bond tests of fiberglass-reinforced plastic bars in concrete, July, 351

Lerman, S: Review of *Ultraclean Technology Handbook, Volume 1, Ultrapure Water* (Ohmi), March, 180

Li, JB: *see* Kang, ZQ, Li, JB, and Wang, ZG

Linley, LJ: *see* Rodak, EM, Taylor, RJ, Hirsch, DB, and Linley, LJ

Lord, JD: *see* Roebuck, B, Lord, JD, Cooper, PM, and McCartney, LN

Low, B-H: *see* Tan, S-A, Low, B-H, and Fwa, T-F

Low, KS: *see* Sivaganthan, J, Ganesan, AR, Tan, BC, Low, KS, and Sirohi, RS

Lukens, KF: *see* Rinnovatore, JV, Lukens, KF, Reinhold, J, and Mahon, W

M

Machmer, D: *see* Fishman, KL and Machmer, D

Mahendran, M: Effect of overload cycles on thin steel roof claddings during cyclonic winds, Sept., 451

Mahon, W: *see* Rinnovatore, JV, Lukens, KF, Reinhold, J, and Mahon, W

Makabe, C, Kaneshiro, H, and Yara, H: Fatigue crack propagation in a specimen with a complicated cross-section; characterization of the stress intensity factor, March, 91

Malotky, LO: Introduction to the Sixth International Civil Aviaiton Security Conference (AVSEC'93), May, 235

Martínez, JA, Kugler, HP, Merino, S, Drude, H, and Criado, AJ: Mechanical study of a hypoeutectoid steel weld, Sept., 458

Masuda, H: *see* Miyahara, K, Matsuoka, S, Nagashima, N, and Masuda, H

Matsuoka, S: *see* Miyahara, K, Matsuoka, S, Nagashima, N, and Masuda, H

Matthews, FL: *see* Häberle, JG and Matthews, FL

Matthews, JM: *see* Schmitt, FC and Matthews, JM

Matthews, JR: *see* KarisAllen, KJ and Matthews, JR

McCartney, LN: *see* Roebuck, B, Lord, JD, Cooper, PM, and McCartney, LN

McKeighan, PC

and Hillberry, BM: On the uncertainties involved in quantifying the fracture toughness of Al-Li-X alloys, Jan., 3

and Smith, DJ: Determining the potential drop calibration of a fatigue crack growth specimen subject to limited experimental observations, July, 291

McNabb, DD: *see* Kobayashi, T, Shockey, DA, Ogundele, G, McNabb, DD, and Sidey, D

McNaney, JM: *see* Gilbert, CJ, McNaney, JM, Dauskardt, RH, and Ritchie, RO

Megargle, R: Review of *Ensuring Software Reliability* (Neufelder), March, 179

Merino, S: *see* Martínez, JA, Kugler, HP, Merino, S, Drude, H, and Criado, AJ

Milligan, HL, Johnson, BM, and Engel, PA: Wear analysis of Björk Shiley Delrin tilting disc heart valves, Sept., 474

Mills, T: *see* Harvey, J, Mills, T, Scheffy, C, Sousa, J, and Monismith, CL

Miyahara, K, Matsuoka, S, Nagashima, N, and Masuda, H: Application of surface fabrication to strain measurement in nanometer scale with the scanning tunneling microscope, March, 121

Monismith, CL: *see* Harvey, J, Mills, T, Scheffy, C, Sousa, J, and Monismith, CL

Moore, ID: Local strain in corrugated pipe: experimental measurements to test a numerical model, March, 132

Moskala, EJ: *see* Pecorini, TJ and Moskala, EJ

Mrema, AL: *see* Pellicane, PJ, Bodig, J, and Mrema, AL

Murakami, Y, Toriyama, T, and Coudert, EM: Instructions for a new method of inclusion rating and correlations with the fatigue limit, July, 318

N–O

Nagashima, N: *see* Miyahara, K, Matsuoka, S, Nagashima, N, and Masuda, H

Navarro, C: *see* Rodríguez, J, Navarro, C, and Sánchez-Gálvez, V

Nazzal, JM: *see* Anabtawi, MZ and Nazzal, JM

Odom, EM and Adams, DF: Development of an improved compression specimen geometry for unreinforced polymers, March, 104

Ogundele, G: *see* Kobayashi, T, Shockey, DA, Ogundele, G, McNabb, DD, and Sidey, D

Osmus, LA: Enforcement of international regulations, May, 238

Ozkan, E: Thermal and mechanical properties of cellular polystyrene and polyurethane insulation materials aged on a flat roof in hot-dry climate, March, 149

P

Parker, F, Jr. and Wu, Y: Comparison of asphalt contents measured with the nuclear gage and extraction methods, Nov., 556

Pecorini, TJ and Moskala, EJ: Influence of testing methodology on the fatigue crack propagation behavior of cellulose esters, Sept., 420

Pellicane, PJ:

Bodig, J, and Mrema, AL: Behavior of wood in transverse compression, July, 383

Bodig, J, and Mrema, AL: Modeling wood in transverse compression, July, 376

Perlov, A: Introduction to workshop on accuracy of load and strain measurement of testing machines, Jan., 52

Pilla, GJ: *see* Gaskin, GB, Pilla, GJ, and Brown, SR

Pippan, R, Plöchl, L, Klanner, F, and Stüwe, HP: Use of fatigue specimens precracked in compression for measuring threshold values and crack growth, March, 98

Plöchl, L: *see* Pippan, R, Plöchl, L, Klanner, F, and Stüwe, HP

Polski, PA: International aviation security research and development, May, 267

R

Rader, RS: *see* Field, DP, Sample, VM, and Rader, RS

Raffaelli, P: *see* Beghini, M, Bertini, L, and Raffaelli, P

Ramsamooj, DV: Prediction of fatigue life of plain concrete beams from fracture tests, May, 183

Rao, PR: *see* Srinivas, M, Kamat, SV, and Rao, PR

Reinhold, J: *see* Rinnovatore, JV, Lukens, KF, Reinhold, J, and Mahon, W

Riemslag, AC: Fatigue testing of high-density polyethylene and polycarbonate with crack length measurement using image processing techniques, Sept., 410

Rinnovatore, JV, Lukens, KF, Reinhold, J, and Mahon, W: Charpy transition studies of an embrittled AISI 8640 lower bainitic steel, Nov., 517

Ritchie, RO: *see* Gilbert, CJ, McNaney, JM, Dauskardt, RH, and Ritchie, RO

Rodak, EM, Taylor, RJ, Hirsch, DB, and Linley, LJ: Effects of sample and test variables on electrical wire insulation flammability, Sept., 447

Rodríguez, J, Navarro, C, and Sánchez-Gálvez, V: Numerical assessment of the dynamic tension test using the split Hopkinson bar, July, 335

Roebuck, B, Lord, JD, Cooper, PM, and McCartney, LN: Data acquisition and analysis of tensile properties for metal matrix composites, Jan., 63

Rosenberg, HS and Syrett, BC: Electrochemical impedance spectroscopy for monitoring coating performance in condensing environments, Nov., 537

S

St. John, K: Review of *Biological Performance of Materials: Fundamentals of Biocompatibility (Second Edition)* (Black), May, 286

Salawu, OS and Williams, C: Excitation system for dynamic testing of large structures, July, 370

Sample, VM:
and Field, DP: Constant temperature-compensated strain rate testing of aluminum, March, 127
see Field, DP, Sample, VM, and Rader, RS

Sánchez-Gálvez, V: *see* Rodríguez, J, Navarro, C, and Sánchez-Gálvez, V

Sandström, R: *see* Jin, L-Z and Sandström, R

Scheffy, C: *see* Harvey, J, Mills, T, Scheffy, C, Sousa, J, and Monismith, CL

Schmitt, FC and Matthews, JM: Controlling, data acquisition, and data processing for axial and shear creep tests using a computer, Jan., 36

Schrems, KK: Wear-related fatigue in a wire rope failure, Sept., 490

Shanley, LA: *see* Slaten, BL, Shanley, LA, and Bellingar, T

Sharpe, WN, Jr. and Böhme, W: Dynamic fracture toughness measurements on small charpy specimens—a preliminary study, Jan., 14

Shaw, WJD and Zhao, W: Back face strain calibration for crack length measurements, Nov., 512

Shehata, IH: Review of *Statics and Strength of Materials, Second Edition* (Morrow), Jan., 84

Shockey, DA: *see* Kobayashi, T, Shockey, DA, Ogundele, G, McNabb, DD, and Sidey, D

Sickels Taves, LB: Analysis of creep and shrinkage in mortars, Nov., 548

Sidey, D: *see* Kobayashi, T, Shockey, DA, Ogundele, G, McNabb, DD, and Sidey, D

Silva-Rodriguez, R: *see* Larralde, J, Silva-Rodriguez, R, Burdette, J, and Harris, B

Sirohi, RS: *see* Sivaganthan, J, Ganesan, AR, Tan, BC, Low, KS, and Sirohi, RS

Sivaganthan, J, Ganesan, AR, Tan, BC, Low, KS, and Sirohi, RS: Study of steel weldments using electronic speckle pattern interferometry, Jan., 42

Slaten, BL, Shanley, LA, and Bellingar, T: Comparision of selected properties of barrier textile materials used in durable, moisture repellent protective clothing, Nov., 577

Smith, DJ: *see* McKeighan, PC and Smith, DJ

Sorini, SS: Development and validation of a standard test method for sequential batch extraction of waste with acidic extraction fluid, March, 168

Sousa, J: *see* Harvey, J, Mills, T, Scheffy, C, Sousa, J, and Monismith, CL

Srinivas, M, Kamat, SV, and Rao, PR: Fractographic technique for the estimation of initiation fracture toughness J_{Ic} for ductile materials, July, 302

Stüwe, HP: *see* Pippan, R, Plöchl, L, Klanner, F, and Stüwe, HP

Sutherland, RG: Standardized training through the use of the ICAO standardized training packages (STPs), May, 251

Svenson, AL, Hargrave, MW, Bank, LC, and Ye, BS: Data analysis techniques for impact tests of composite materials, Sept., 431

Syrett, BC: *see* Rosenberg, HS and Syrett, BC

T

Tan, BC: *see* Sivaganthan, J, Ganesan, AR, Tan, BC, Low, KS, and Sirohi, RS

Tan, S-A, Low, B-H, and Fwa, T-F: Behavior of asphalt concrete mixtures in triaxial compression, May, 195

Tang, T: Effects of load-distributed width on split tension of unnotched and notched cylindrical specimens, Sept., 401

Taylor, RJ: *see* Rodak, EM, Taylor, RJ, Hirsch, DB, and Linley, LJ

Tjia, RE: *see* Cios, KJ, Baaklini, GY, Vary, A, and Tjia, RE

Todres, HA and Bhattacharja, S: Solvent-free, nuclear-free determination of asphalt content and gradation of hot-mix asphalt concrete, Nov., 564

Tomesani, L: Relevant errors associated with tension testing of metals, May, 212

Toriyama, T: *see* Murakami, Y, Toriyama, T, and Coudert, EM

Toutanji, HA and El-Korchi, T: Uniaxial tensile strength of cementitious composites, May, 226

Tovey, FM: Measurement uncertainty analysis of a transfer standard force calibration system, Jan., 70

Trindade, AC, Cavaleiro, A, and Fernandes, JV: Estimation of Young's modulus and of hardness by ultra-low load hardness tests with a Vickers indenter, July, 365

Troyanskii, AI and Borisenko, VA: Temperature dependencies of elasticity characteristics for tellurium-alloyed gallium arsenide, May, 233

Turner, R: Australian system for aviation security identification cards and associated personnel background checking, May, 243

V

Vaidya, RU: *see* Wolfenden, A, Gill, JE, Chawla, KK, Vaidya, RU, and Venkatesh, R

Vary, A: *see* Cios, KJ, Baaklini, GY, Vary, A, and Tjia, RE

Venkatesh, R: *see* Wolfenden, A, Gill, JE, Chawla, KK, Vaidya, RU, and Venkatesh, R

W

Wall, B: IATA and its cooperative role in aviation security, May, 257

Wang, ZG: *see* Kang, ZQ, Li, JB, and Wang, ZG

Whitmoyer, SL and Kim, YR: Determining asphalt concrete properties via the impact resonant method, March, 139

Williams, C: *see* Salawu, OS and Williams, C

Wilson, CD and Landes, JD: Inconsistencies between CTOD and *J* calculations, Nov., 505

Wolfenden, A, Gill, JE, Chawla, KK, Vaidya, RU, and Venkatesh, R: Temperature dependence of dynamic Young's modulus and mechanical damping in a Nextel fiber-reinforced glass composite, Nov., 571

Wood, FW:
Introduction to the symposium on case studies of wear-related failure analyses, Sept., 468
On the role and analysis of wear in failures, Sept., 470

Wu, XR: *see* Zhu, YG, Wu, SR, and Yang, YA

Wu, Y: *see* Parker, F, Jr. and Wu, Y

Y-Z

Yang, YA: *see* Zhu, YG, Wu, SR, and Yang, YA

Yara, H: *see* Makabe, C, Kaneshiro, H, and Yara, H

Ye, BS: *see* Svenson, AL, Hargrave, MW, Bank, LC, and Ye, BS

Zhao, W: *see* Shaw, WJD and Zhao, W

Zhu, YG, Wu, XR, and Yang, YA: New restraint for high-load-transfer fastener fatigue test, Jan., 81

Journal of Testing and Evaluation
Subject Index
Volume 22, 1994

A

Abrasive wear
On the role and analysis of wear in failures (Wood, FW), Sept., 470

Accuracy
Introduction to workshop on accuracy of load and strain measurement of testing machines (Perlov, A), Jan., 52
Relevant errors associated with tension testing of metals (Tomesani, L), May, 212

Adhesive bonding
Preparation of stainless steel adherends for adhesive bonding (Gaskin, GB, Pilla, GJ, and Brown, SR), May, 222

Adhesive wear
On the role and analysis of wear in failures (Wood, FW), Sept., 470

Adhesives
Preparation of stainless steel adherends for adhesive bonding (Gaskin, GB, Pilla, GJ, and Brown, SR), May, 222

Aging systems
Deducing crack history in an aged boiler tube from fracture surface topography (Kobayashi, T, Shockey, DA, Ogundele, G, McNabb, DD, and Sidey, D), July, 309

Air cargo
Need to harmonize cargo security rules (Forbes, D), May, 265
Role/responsibility of the freight forwarder (Koch, A), May, 259

Air passengers
Reconciling passenger facilitation and security (Joy, TJC), May, 245

Air security
Development of trace explosive detection standards (Elias, L), May, 280
Enforcement of international regulations (Osmus, LA), May, 238
IATA and its cooperative role in aviation security (Wall, B), May, 257
Need to harmonize cargo security rules (Forbes, D), May, 265
Reaching consensus on technical standards through ICAO: the work of ad hoc group of specialists on the detection of explosives (Cartwright, N), May, 277
Reconciling passenger facilitation and security (Joy, TJC), May, 245
Regulation: perception and reality (Laird, DR), May, 240
Role/responsibility of the freight forwarder (Koch, A), May, 259
Security technologies and techniques: airport security systems (Bouisset, J-F), May, 247
Selection and use of explosives detection devices to check hand-held luggage (Hnatnicky, S), May, 282

Air voids
Evaluation of several techniques for measuring air-void content in asphalt concrete specimens (Harvey, J, Mills, T, Scheffy, C, Sousa, J, and Monismith, CL), Sept., 424

Airports
Australian system for aviation security identification cards and associated personnel background checking (Turner, R), May, 243
International aviation security research and development (Polski, PA), May, 267
Introduction to the Sixth International Civil Aviaiton Security Conference (AVSEC'93) (Malotky, LO), May, 235
Reconciling passenger facilitation and security (Joy, TJC), May, 245
Security technologies and techniques: airport security systems (Bouisset, J-F), May, 247
Selection and use of explosives detection devices to check hand-held luggage (Hnatnicky, S), May, 282

Aluminum
Constant temperature-compensated strain rate testing of aluminum (Sample, VM and Field, DP), March, 127
Determination of softening kinetics in a material by measuring the evolution of hot flow stress (Field, DP, Sample, VM, and Rader, RS), Nov., 530

Approximation
Stress correction for removal of material in X-ray stress determination (Kang, ZQ, Li, JB, and Wang, ZG), May, 217

Asphalt concrete
Behavior of asphalt concrete mixtures in triaxial compression (Tan, S-A, Low, B-H, and Fwa, T-F), May, 195
Determining asphalt concrete properties via the impact resonant method (Whitmoyer, SL and Kim, YR), March, 139
Evaluation of several techniques for measuring air-void content in asphalt concrete specimens (Harvey, J, Mills, T, Scheffy, C, Sousa, J, and Monismith, CL), Sept., 424
Solvent-free, nuclear-free determination of asphalt content and gradation of hot-mix asphalt concrete (Todres, HA and Bhattacharja, S), Nov., 564

Asphalt content
Comparison of asphalt contents measured with the nuclear gage and extraction methods (Parker, F, Jr. and Wu, Y), Nov., 556
Solvent-free, nuclear-free determination of asphalt content and gradation of hot-mix asphalt concrete (Todres, HA and Bhattacharja, S), Nov., 564

ASTM Committee F12
Aviation security standards development within ASTM Committee F-12 on Secu-

rity Systems and Equipment (Draghetti, PM), May, 275

Australia
Australian system for aviation security identification cards and associated personnel background checking (Turner, R), May, 243

Aviation security
Aviation security standards development within ASTM Committee F-12 on Security Systems and Equipment (Draghetti, PM), May, 275

Standardized training through the use of the ICAO standardized training packages (STPs) (Sutherland, RG), May, 251

Aviation security identification cards
Australian system for aviation security identification cards and associated personnel background checking (Turner, R), May, 243

B

Back face strain
Back face strain calibration for crack length measurements (Shaw, WJD and Zhao, W), Nov., 512

Back-face strain compliance and electrical-potential crack length calibrations for the disk-shaped compact-tension DC(T) specimen (Gilbert, CJ, McNaney, JM, Dauskardt, RH, and Ritchie, RO), March, 117

Barrier materials
Comparison of selected properties of barrier textile materials used in durable, moisture repellent protective clothing (Slaten, BL, Shanley, LA, and Bellingar, T), Nov., 577

Biomechanics
Physiologic challenges induced by particiipation in ice hockey--implications for training (Green, HJ), Jan., 48

Bitumen
Solvent-free, nuclear-free determination of asphalt content and gradation of hot-mix asphalt concrete (Todres, HA and Bhattacharja, S), Nov., 564

Bituminous materials
Comparison of asphalt contents measured with the nuclear gage and extraction methods (Parker, F, Jr. and Wu, Y), Nov., 556

Solvent-free, nuclear-free determination of asphalt content and gradation of hot-mix asphalt concrete (Todres, HA and Bhattacharja, S), Nov., 564

Boiler tubes
Deducing crack history in an aged boiler tube from fracture surface topography (Kobayashi, T, Shockey, DA, Ogundele, G, McNabb, DD, and Sidey, D), July, 309

Bulk modulus
Testing techniques for measurement of bulk modulus (Fishman, KL and Machmer, D), March, 161

C

Calibration
Measurement uncertainty analysis of a transfer standard force calibration system (Tovey, FM), Jan., 70

Practical aspects of dynamic verification of extensometers: Part I—The concepts (Albright, FJ and Annala, J), Jan., 53

Practical aspects of dynamic verification of extensometers: Part II—Actual examples (Albright, FJ and Annala, J), Jan., 58

Calorific values
Effect of composition of El-lajjun oil shale on its calorific value (Anabtawi, MZ and Nazzal, JM), March, 175

Capstan
Comparative studies of yarn and fabric friction (Ajayi, JO and Elder, HM), Sept., 463

Cellular
Thermal and mechanical properties of cellular polystyrene and polyurethane insulation materials aged on a flat roof in hot-dry climate (Ozkan, E), March, 149

Cellulose-acetate-propionate
Influence of testing methodology on the fatigue crack propagation behavior of cellulose esters (Pecorini, TJ and Moskala, EJ), Sept., 420

Cement
Uniaxial tensile strength of cementitious composites (Toutanji, HA and El-Korchi, T), May, 226

Cementitious composites
Uniaxial tensile strength of cementitious composites (Toutanji, HA and El-Korchi, T), May, 226

Ceramics
Radial basis function network learns ceramic processing and predicts related strength and density (Cios, KJ, Baaklini, GY, Vary, A, and Tjia, RE), July, 343

Temperature dependence of dynamic Young's modulus and mechanical damping in a Nextel fiber-reinforced glass composite (Wolfenden, A, Gill, JE, Chawla, KK, Vaidya, RU, and Venkatesh, R), Nov., 571

Charpy
Charpy transition studies of an embrittled AISI 8640 lower bainitic steel (Rinnovatore, JV, Lukens, KF, Reinhold, J, and Mahon, W), Nov., 517

Coating performance
Electrochemical impedance spectroscopy for monitoring coating performance in condensing environments (Rosenberg, HS and Syrett, BC), Nov., 537

Compact-tension specimens
Back-face strain compliance and electrical-potential crack length calibrations for the disk-shaped compact-tension DC(T) specimen (Gilbert, CJ, McNaney, JM, Dauskardt, RH, and Ritchie, RO), March, 117

Compliance
Back face strain calibration for crack length measurements (Shaw, WJD and Zhao, W), Nov., 512

Crack length and *J*-integral expressions for specimens loaded in tension (Faucher, B), Jan., 30

Composites
Bond tests of fiberglass-reinforced plastic bars in concrete (Larralde, J, Silva-Rodriguez, R, Burdette, J, and Harris, B), July, 351

Data acquisition and analysis of tensile properties for metal matrix composites (Roebuck, B, Lord, JD, Cooper, PM, and McCartney, LN), Jan., 63

Data analysis techniques for impact tests of composite materials (Svenson, AL, Hargrave, MW, Bank, LC, and Ye, BS), Sept., 431

Temperature dependence of dynamic Young's modulus and mechanical damping in a Nextel fiber-reinforced glass composite (Wolfenden, A, Gill, JE, Chawla, KK, Vaidya, RU, and Venkatesh, R), Nov., 571

Compression
Development of an improved compression specimen geometry for unreinforced polymers (Odom, EM and Adams, DF), March, 104

Influence of test piece preparation on the compressive strength of unidirectional fiber-reinforced plastic (Häberle, JG and Matthews, FL), July, 360

Compression precracking
Use of fatigue specimens precracked in compression for measuring threshold values and crack growth (Pippan, R, Plöchl, L, Klanner, F, and Stüwe, HP), March, 98

Compressive strength
Analysis of creep and shrinkage in mortars (Sickels Taves, LB), Nov., 548

Computer control
Controlling, data acquisition, and data processing for axial and shear creep tests using a computer (Schmitt, FC and Matthews, JM), Jan., 36

Computers
Controlling, data acquisition, and data processing for axial and shear creep tests using a computer (Schmitt, FC and Matthews, JM), Jan., 36

Concrete
Behavior of asphalt concrete mixtures in triaxial compression (Tan, S-A, Low, B-H, and Fwa, T-F), May, 195

Determining asphalt concrete properties via the impact resonant method (Whitmoyer, SL and Kim, YR), March, 139

Evaluation of several techniques for measuring air-void content in asphalt concrete specimens (Harvey, J, Mills, T, Scheffy, C, Sousa, J, and Monismith, CL), Sept., 424

Prediction of fatigue life of plain concrete beams from fracture tests (Ramsamooj, DV), May, 183

Concrete reinforcement
Bond tests of fiberglass-reinforced plastic bars in concrete (Larralde, J, Silva-Rodriguez, R, Burdette, J, and Harris, B), July, 351

Condensing environments
Electrochemical impedance spectroscopy for monitoring coating performance in condensing environments (Rosenberg, HS and Syrett, BC), Nov., 537

Conditioning
Physiologic challenges induced by participation in ice hockey—implications for training (Green, HJ), Jan., 48

Contact stress
Wear-related fatigue in a wire rope failure (Schrems, KK), Sept., 490

Crack closures
Fatigue crack propagation in a specimen with a complicated cross-section; characterization of the stress intensity factor (Makabe, C, Kaneshiro, H, and Yara, H), March, 91

Crack growth
Determining the potential drop calibration of a fatigue crack growth specimen subject to limited experimental observations (McKeighan, PC and Smith, DJ), July, 291

Fatigue testing of high-density polyethylene and polycarbonate with crack length measurement using image processing techniques (Riemslag, AC), Sept., 410

Use of fatigue specimens precracked in compression for measuring threshold values and crack growth (Pippan, R, Plöchl, L, Klanner, F, and Stüwe, HP), March, 98

Crack growth size
R-curve generation and CTOD evaluation considering maximum crack growth size and parabolic crack front (Bhattacharya, S and Kumar, AN), Jan., 20

Crack length
Back face strain calibration for crack length measurements (Shaw, WJD and Zhao, W), Nov., 512

Determining the potential drop calibration of a fatigue crack growth specimen subject to limited experimental observations (McKeighan, PC and Smith, DJ), July, 291

Fatigue testing of high-density polyethylene and polycarbonate with crack length measurement using image processing techniques (Riemslag, AC), Sept., 410

Crack propagation
Fatigue crack propagation in a specimen with a complicated cross-section; characterization of the stress intensity factor (Makabe, C, Kaneshiro, H, and Yara, H), March, 91

Crack tip opening displacement (CTOD)
Inconsistencies between CTOD and *J* calculations (Wilson, CD and Landes, JD), Nov., 505

R-curve generation and CTOD evaluation considering maximum crack growth size and parabolic crack front (Bhattacharya, S and Kumar, AN), Jan., 20

Cracks
Effects of load-distributed width on split tension of unnotched and notched cylindrical specimens (Tang, T), Sept., 401

Crazing
Influence of testing methodology on the fatigue crack propagation behavior of cellulose esters (Pecorini, TJ and Moskala, EJ), Sept., 420

Creep
Analysis of creep and shrinkage in mortars (Sickels Taves, LB), Nov., 548

Creep deformation
Numerical model of primary creep deformation in a novel double shear specimen (Johnson, NL and Earthman, JC), March, 111

Creep rupture
Numerical model of primary creep deformation in a novel double shear specimen (Johnson, NL and Earthman, JC), March, 111

Creep tests
Controlling, data acquisition, and data processing for axial and shear creep tests using a computer (Schmitt, FC and Matthews, JM), Jan., 36

Cyclic properties
Proposed test method for dynamic properties of connections assembled with mechanical fasteners (Dolan, JD), Nov., 542

D

Data acquisition
Controlling, data acquisition, and data processing for axial and shear creep tests using a computer (Schmitt, FC and Matthews, JM), Jan., 36

Data processing
Controlling, data acquisition, and data processing for axial and shear creep tests using a computer (Schmitt, FC and Matthews, JM), Jan., 36

Defects
Study of steel weldments using electronic speckle pattern interferometry (Sivaganthan, J, Ganesan, AR, Tan, BC, Low, KS, and Sirohi, RS), Jan., 42

Deflection
Determination of single edge-notched bend specimen load line displacement from remotely located sensors in elastic-plastic fracture testing (KarisAllen, KJ and Matthews, JR), Nov., 581

Delrin
Wear analysis of Björk Shiley Delrin tilting disc heart valves (Milligan, HL, Johnson, BM, and Engel, PA), Sept., 474

Displacement
Effects of load-distributed width on split

tension of unnotched and notched cylindrical specimens (Tang, T), Sept., 401

Ductile materials
Fractographic technique for the estimation of initiation fracture toughness J_{Ic} for ductile materials (Srinivas, M, Kamat, SV, and Rao, PR), July, 302

Dynamic fracture
Dynamic fracture toughness measurements on small charpy specimens—a preliminary study (Sharpe, WN, Jr. and Böhme, W), Jan., 14

Dynamic properties
Proposed test method for dynamic properties of connections assembled with mechanical fasteners (Dolan, JD), Nov., 542

Dynamic tests
Effect of high strain rate on the properties of PVC pipe (Al-Bastaki, NMS), Nov., 574

Excitation system for dynamic testing of large structures (Salawu, OS and Williams, C), July, 370

Numerical assessment of the dynamic tension test using the split Hopkinson bar (Rodríguez, J, Navarro, C, and Sánchez-Gálvez, V), July, 335

E

Elastic characteristics
Temperature dependencies of elasticity characteristics for tellurium-alloyed gallium arsenide (Troyanskii, AI and Borisenko, VA), May, 233

Elastic-plastic properties
Estimation of Young's modulus and of hardness by ultra-low load hardness tests with a Vickers indenter (Trindade, AC, Cavaleiro, A, and Fernandes, JV), July, 365

Elastomeric bearings
Testing techniques for measurement of bulk modulus (Fishman, KL and Machmer, D), March, 161

Elastomers
Testing techniques for measurement of bulk modulus (Fishman, KL and Machmer, D), March, 161

Electrical insulating materials
Effects of sample and test variables on electrical wire insulation flammability (Rodak, EM, Taylor, RJ, Hirsch, DB, and Linley, LJ), Sept., 447

Electrical-potential calibration
Back-face strain compliance and electrical-potential crack length calibrations for the disk-shaped compact-tension DC(T) specimen (Gilbert, CJ, McNaney, JM, Dauskardt, RH, and Ritchie, RO), March, 117

Electrochemical impedance spectroscopy (EIA)
Electrochemical impedance spectroscopy for monitoring coating performance in condensing environments (Rosenberg, HS and Syrett, BC), Nov., 537

Electrochemical measurements
Electrochemical impedance spectroscopy for monitoring coating performance in condensing environments (Rosenberg, HS and Syrett, BC), Nov., 537

Electronic speckle pattern interferometry
Study of steel weldments using electronic speckle pattern interferometry (Sivaganthan, J, Ganesan, AR, Tan, BC, Low, KS, and Sirohi, RS), Jan., 42

Embrittlement
Charpy transition studies of an embrittled AISI 8640 lower bainitic steel (Rinnovatore, JV, Lukens, KF, Reinhold, J, and Mahon, W), Nov., 517

Energy absorption
Data analysis techniques for impact tests of composite materials (Svenson, AL, Hargrave, MW, Bank, LC, and Ye, BS), Sept., 431

Enforcement
Enforcement of international regulations (Osmus, LA), May, 238

Environment
Physiologic challenges induced by participation in ice hockey—implications for training (Green, HJ), Jan., 48

Exciters
Excitation system for dynamic testing of large structures (Salawu, OS and Williams, C), July, 370

Expanded polystyrene
Thermal and mechanical properties of cellular polystyrene and polyurethane insulation materials aged on a flat roof in hot-dry climate (Ozkan, E), March, 149

Experimental verification
Modeling wood in transverse compression (Pellicane, PJ, Bodig, J, and Mrema, AL), July, 376

Explosives detection
Reaching consensus on technical standards through ICAO: the work of ad hoc group of specialists on the detection of explosives (Cartwright, N), May, 277

Selection and use of explosives detection devices to check hand-held luggage (Hnatnicky, S), May, 282

Extensometers
Practical aspects of dynamic verification of extensometers: Part I—The concepts (Albright, FJ and Annala, J), Jan., 53

Practical aspects of dynamic verification of extensometers: Part II—Actual examples (Albright, FJ and Annala, J), Jan., 58

Extraction procedures
Development and validation of a standard test method for sequential batch extraction of waste with acidic extraction fluid (Sorini, SS), March, 168

Extruded polystyrene
Thermal and mechanical properties of cellular polystyrene and polyurethane insulation materials aged on a flat roof in hot-dry climate (Ozkan, E), March, 149

F

Fabrics
Comparative studies of yarn and fabric friction (Ajayi, JO and Elder, HM), Sept., 463

Failure
Introduction to the symposium on case studies of wear-related failure analyses (Wood, FW), Sept., 468

On the role and analysis of wear in failures (Wood, FW), Sept., 470

Fasteners
New restraint for high-load-transfer fastener fatigue test (Zhu, YG, Wu, XR, and Yang, YA), Jan., 81

Proposed test method for dynamic properties of connections assembled with mechanical fasteners (Dolan, JD), Nov., 542

Fatigue
Application of surface fabrication to strain measurement in nanometer scale with the scanning tunneling microscope (Miyahara, K, Matsuoka, S, Nagashima, N, and Masuda, H), March, 121

Back face strain calibration for crack length measurements (Shaw, WJD and Zhao, W), Nov., 512

Determining the potential drop calibration of a fatigue crack growth specimen subject to limited experimental observa-

tions (McKeighan, PC and Smith, DJ), July, 291

Fatigue crack propagation in a specimen with a complicated cross-section; characterization of the stress intensity factor (Makabe, C, Kaneshiro, H, and Yara, H), March, 91

Fatigue testing of high-density polyethylene and polycarbonate with crack length measurement using image processing techniques (Riemslag, AC), Sept., 410

Influence of testing methodology on the fatigue crack propagation behavior of cellulose esters (Pecorini, TJ and Moskala, EJ), Sept., 420

Instructions for a new method of inclusion rating and correlations with the fatigue limit (Murakami, Y, Toriyama, T, and Coudert, EM), July, 318

New restraint for high-load-transfer fastener fatigue test (Zhu, YG, Wu, XR, and Yang, YA), Jan., 81

Prediction of fatigue life of plain concrete beams from fracture tests (Ramsamooj, DV), May, 183

Stress correction for removal of material in X-ray stress determination (Kang, ZQ, Li, JB, and Wang, ZG), May, 217

Use of fatigue specimens precracked in compression for measuring threshold values and crack growth (Pippan, R, Plöchl, L, Klanner, F, and Stüwe, HP), March, 98

Wear-related fatigue in a wire rope failure (Schrems, KK), Sept., 490

Fatigue strengths
Instructions for a new method of inclusion rating and correlations with the fatigue limit (Murakami, Y, Toriyama, T, and Coudert, EM), July, 318

Federal Aviation Administration (FAA)
International aviation security research and development (Polski, PA), May, 267

Fiber-reinforced plastics
Influence of test piece preparation on the compressive strength of unidirectional fiber-reinforced plastic (Häberle, JG and Matthews, FL), July, 360

Fiberglass reinforced plastics
Bond tests of fiberglass-reinforced plastic bars in concrete (Larralde, J, Silva-Rodriguez, R, Burdette, J, and Harris, B), July, 351

Fibers
Temperature dependence of dynamic Young's modulus and mechanical damping in a Nextel fiber-reinforced glass composite (Wolfenden, A, Gill, JE, Chawla, KK, Vaidya, RU, and Venkatesh, R), Nov., 571

Finite element analysis
Local strain in corrugated pipe: experimental measurements to test a numerical model (Moore, ID), March, 132

Finite element model
Behavior of wood in transverse compression (Pellicane, PJ, Bodig, J, and Mrema, AL), July, 383

Modeling wood in transverse compression (Pellicane, PJ, Bodig, J, and Mrema, AL), July, 376

Flammability
Effects of sample and test variables on electrical wire insulation flammability (Rodak, EM, Taylor, RJ, Hirsch, DB, and Linley, LJ), Sept., 447

Force transducers
Measurement uncertainty analysis of a transfer standard force calibration system (Tovey, FM), Jan., 70

Fourier analysis
Computer method of analysis for tire wear characterization, identification, and classification (Changizi, K), Jan., 45

Fractography
Deducing crack history in an aged boiler tube from fracture surface topography (Kobayashi, T, Shockey, DA, Ogundele, G, McNabb, DD, and Sidey, D), July, 309

Fracture behavior
On the uncertainties involved in quantifying the fracture toughness of Al-Li-X alloys (McKeighan, PC and Hillberry, BM), Jan., 3

Fracture mechanics
Deducing crack history in an aged boiler tube from fracture surface topography (Kobayashi, T, Shockey, DA, Ogundele, G, McNabb, DD, and Sidey, D), July, 309

Effects of load-distributed width on split tension of unnotched and notched cylindrical specimens (Tang, T), Sept., 401

On the uncertainties involved in quantifying the fracture toughness of Al-Li-X alloys (McKeighan, PC and Hillberry, BM), Jan., 3

Prediction of fatigue life of plain concrete beams from fracture tests (Ramsamooj, DV), May, 183

R-curve generation and CTOD evaluation considering maximum crack growth size and parabolic crack front (Bhattacharya, S and Kumar, AN), Jan., 20

Fracture surface topography analysis
Deducing crack history in an aged boiler tube from fracture surface topography (Kobayashi, T, Shockey, DA, Ogundele, G, McNabb, DD, and Sidey, D), July, 309

Fracture testing
Back-face strain compliance and electrical-potential crack length calibrations for the disk-shaped compact-tension DC(T) specimen (Gilbert, CJ, McNaney, JM, Dauskardt, RH, and Ritchie, RO), March, 117

Crack length and *J*-integral expressions for specimens loaded in tension (Faucher, B), Jan., 30

Determination of single edge-notched bend specimen load line displacement from remotely located sensors in elastic-plastic fracture testing (KarisAllen, KJ and Matthews, JR), Nov., 581

Dynamic fracture toughness measurements on small charpy specimens—a preliminary study (Sharpe, WN, Jr. and Böhme, W), Jan., 14

Fractographic technique for the estimation of initiation fracture toughness J_{Ic} for ductile materials (Srinivas, M, Kamat, SV, and Rao, PR), July, 302

Inconsistencies between CTOD and *J* calculations (Wilson, CD and Landes, JD), Nov., 505

Suggested test procedure to measure Mixed Mode I-III fracture toughness of brittle materials (Kumar, AM, Hirth, JP, Hoagland, R, and Feng, X), July, 327

Fracture toughness
Fractographic technique for the estimation of initiation fracture toughness J_{Ic} for ductile materials (Srinivas, M, Kamat, SV, and Rao, PR), July, 302

Inconsistencies between CTOD and *J* calculations (Wilson, CD and Landes, JD), Nov., 505

On the uncertainties involved in quantifying the fracture toughness of Al-Li-X alloys (McKeighan, PC and Hillberry, BM), Jan., 3

Friction
Comparative studies of yarn and fabric friction (Ajayi, JO and Elder, HM), Sept., 463

Objective evaluation of surface characteristics to determine smoothness of pile fabrics (Ajoyi, JO and Elder, HM), July, 388

G

Gallium arsenide
Temperature dependencies of elasticity characteristics for tellurium-alloyed gallium arsenide (Troyanskii, AI and Borisenko, VA), May, 233

Gears
Scoring of precision spur gears (Budinski, KG), Sept., 485

Glass
Temperature dependence of dynamic Young's modulus and mechanical damping in a Nextel fiber-reinforced glass composite (Wolfenden, A, Gill, JE, Chawla, KK, Vaidya, RU, and Venkatesh, R), Nov., 571

Glass fiber-reinforced plastic
Data analysis techniques for impact tests of composite materials (Svenson, AL, Hargrave, MW, Bank, LC, and Ye, BS), Sept., 431

Gloves
Differential air deflation quality assurance test for surgical gloves (Carey, RF), Sept., 440

Grooves
Fatigue crack propagation in a specimen with a complicated cross-section; characterization of the stress intensity factor (Makabe, C, Kaneshiro, H, and Yara, H), March, 91

H

Hazardous environments
Comparision of selected properties of barrier textile materials used in durable, moisture repellent protective clothing (Slaten, BL, Shanley, LA, and Bellingar, T), Nov., 577

Heart valves
Wear analysis of Björk Shiley Delrin tilting disc heart valves (Milligan, HL, Johnson, BM, and Engel, PA), Sept., 474

High-density polyethylene
Local strain in corrugated pipe: experimental measurements to test a numerical model (Moore, ID), March, 132

Hole-drilling method
Numerical analysis of plasticity effects in the hole-drilling residual stress measurement (Beghini, M, Bertini, L, and Raffaelli, P), Nov., 522

Hopkinson bar
Numerical assessment of the dynamic tension test using the split Hopkinson bar (Rodríguez, J, Navarro, C, and Sánchez-Gálvez, V), July, 335

Hot mix asphalt
Comparison of asphalt contents measured with the nuclear gage and extraction methods (Parker, F, Jr. and Wu, Y), Nov., 556

Hydraulic tension tests
Uniaxial tensile strength of cementitious composites (Toutanji, HA and El-Korchi, T), May, 226

I

Image processing
Fatigue testing of high-density polyethylene and polycarbonate with crack length measurement using image processing techniques (Riemslag, AC), Sept., 410

Impact
Data analysis techniques for impact tests of composite materials (Svenson, AL, Hargrave, MW, Bank, LC, and Ye, BS), Sept., 431

Impact resonant method
Determining asphalt concrete properties via the impact resonant method (Whitmoyer, SL and Kim, YR), March, 139

Impact wear
Wear analysis of Björk Shiley Delrin tilting disc heart valves (Milligan, HL, Johnson, BM, and Engel, PA), Sept., 474

Inclusion rating
Instructions for a new method of inclusion rating and correlations with the fatigue limit (Murakami, Y, Toriyama, T, and Coudert, EM), July, 318

Indirect carriers
Need to harmonize cargo security rules (Forbes, D), May, 265

International Air Transport Association
IATA and its cooperative role in aviation security (Wall, B), May, 257
Role/responsibility of the freight forwarder (Koch, A), May, 259

International Civil Aviation Organization
Australian system for aviation security identification cards and associated personnel background checking (Turner, R), May, 243
Aviation security standards development within ASTM Committee F-12 on Security Systems and Equipment (Draghetti, PM), May, 275
Development of trace explosive detection standards (Elias, L), May, 280
Enforcement of international regulations (Osmus, LA), May, 238
IATA and its cooperative role in aviation security (Wall, B), May, 257
International aviation security research and development (Polski, PA), May, 267
Need to harmonize cargo security rules (Forbes, D), May, 265
Reaching consensus on technical standards through ICAO: the work of ad hoc group of specialists on the detection of explosives (Cartwright, N), May, 277
Reconciling passenger facilitation and security (Joy, TJC), May, 245
Regulation: perception and reality (Laird, DR), May, 240
Role/responsibility of the freight forwarder (Koch, A), May, 259
Security technologies and techniques: airport security systems (Bouisset, J-F), May, 247
Selection and use of explosives detection devices to check hand-held luggage (Hnatnicky, S), May, 282
Standardized training through the use of the ICAO standardized training packages (STPs) (Sutherland, RG), May, 251

Interometry
Dynamic fracture toughness measurements on small charpy specimens—a preliminary study (Sharpe, WN, Jr. and Böhme, W), Jan., 14

J-L

***J* integral**
Crack length and *J*-integral expressions for specimens loaded in tension (Faucher, B), Jan., 30
Inconsistencies between CTOD and *J* calculations (Wilson, CD and Landes, JD), Nov., 505

Joints
New restraint for high-load-transfer fastener fatigue test (Zhu, YG, Wu, XR, and Yang, YA), Jan., 81

Leaching
Development and validation of a standard test method for sequential batch extraction of waste with acidic extraction fluid (Sorini, SS), March, 168

Leakage test
Differential air deflation quality assurance test for surgical gloves (Carey, RF), Sept., 440

LVDT
Determination of single edge-notched bend specimen load line displacement from remotely located sensors in elastic-plastic fracture testing (KarisAllen, KJ and Matthews, JR), Nov., 581

LVDT deflection
Determination of single edge-notched bend specimen load line displacement from remotely located sensors in elastic-plastic fracture testing (KarisAllen, KJ and Matthews, JR), Nov., 581

M

Machinability
Evaluation of machinability data (Jin, L-Z and Sandström, R), May, 204

Machines
Introduction to the symposium on case studies of wear-related failure analyses (Wood, FW), Sept., 468

Materials selection
Evaluation of machinability data (Jin, L-Z and Sandström, R), May, 204

Measurement uncertainty
Measurement uncertainty analysis of a transfer standard force calibration system (Tovey, FM), Jan., 70

Mechanical connections
Proposed test method for dynamic properties of connections assembled with mechanical fasteners (Dolan, JD), Nov., 542

Mechanical properties
Effect of high strain rate on the properties of PVC pipe (Al-Bastaki, NMS), Nov., 574

Mechanical study of a hypoeutectoid steel weld (Martínez, JA, Kugler, HP, Merino, S, Drude, H, and Criado, AJ), Sept., 458

Mechanical testing
Estimation of Young's modulus and of hardness by ultra-low load hardness tests with a Vickers indenter (Trindade, AC, Cavaleiro, A, and Fernandes, JV), July, 365

Excitation system for dynamic testing of large structures (Salawu, OS and Williams, C), July, 370

Introduction to workshop on accuracy of load and strain measurement of testing machines (Perlov, A), Jan., 52

Measurement uncertainty analysis of a transfer standard force calibration system (Tovey, FM), Jan., 70

Mechanical study of a hypoeutectoid steel weld (Martínez, JA, Kugler, HP, Merino, S, Drude, H, and Criado, AJ), Sept., 458

Numerical analysis of plasticity effects in the hole-drilling residual stress measurement (Beghini, M, Bertini, L, and Raffaelli, P), Nov., 522

Numerical assessment of the dynamic tension test using the split Hopkinson bar (Rodríguez, J, Navarro, C, and Sánchez-Gálvez, V), July, 335

Numerical model of primary creep deformation in a novel double shear specimen (Johnson, NL and Earthman, JC), March, 111

Practical aspects of dynamic verification of extensometers: Part I—The concepts (Albright, FJ and Annala, J), Jan., 53

Practical aspects of dynamic verification of extensometers: Part II—Actual examples (Albright, FJ and Annala, J), Jan., 58

Metal matrix
Data acquisition and analysis of tensile properties for metal matrix composites (Roebuck, B, Lord, JD, Cooper, PM, and McCartney, LN), Jan., 63

Metal removal rate
Evaluation of machinability data (Jin, L-Z and Sandström, R), May, 204

Metals
Constant temperature-compensated strain rate testing of aluminum (Sample, VM and Field, DP), March, 127

Determination of softening kinetics in a material by measuring the evolution of hot flow stress (Field, DP, Sample, VM, and Rader, RS), Nov., 530

Evaluation of machinability data (Jin, L-Z and Sandström, R), May, 204

Relevant errors associated with tension testing of metals (Tomesani, L), May, 212

Mixed mode fracture
On the uncertainties involved in quantifying the fracture toughness of Al-Li-X alloys (McKeighan, PC and Hillberry, BM), Jan., 3

Mixed mode toughness
Suggested test procedure to measure Mixed Mode I-III fracture toughness of brittle materials (Kumar, AM, Hirth, JP, Hoagland, R, and Feng, X), July, 327

Mortars
Analysis of creep and shrinkage in mortars (Sickels Taves, LB), Nov., 548

N-O

Nanofabrication
Application of surface fabrication to strain measurement in nanometer scale with the scanning tunneling microscope (Miyahara, K, Matsuoka, S, Nagashima, N, and Masuda, H), March, 121

Neural networks
Radial basis function network learns ceramic processing and predicts related strength and density (Cios, KJ, Baaklini, GY, Vary, A, and Tjia, RE), July, 343

Numerical modeling
Numerical assessment of the dynamic tension test using the split Hopkinson bar (Rodríguez, J, Navarro, C, and Sánchez-Gálvez, V), July, 335

Oil shale
Effect of composition of El-lajjun oil shale on its calorific value (Anabtawi, MZ and Nazzal, JM), March, 175

Overload cycles
Effect of overload cycles on thin steel roof claddings during cyclonic winds (Mahendran, M), Sept., 451

Oxygen-enriched atmospheres
Effects of sample and test variables on electrical wire insulation flammability (Rodak, EM, Taylor, RJ, Hirsch, DB, and Linley, LJ), Sept., 447

P

Performance specifications
Comparison of selected properties of barrier textile materials used in durable, moisture repellent protective clothing (Slaten, BL, Shanley, LA, and Bellingar, T), Nov., 577

Perpendicular-to-grain compression
Modeling wood in transverse compression (Pellicane, PJ, Bodig, J, and Mrema, AL), July, 376

Petroleum products
Effect of composition of El-lajjun oil shale on its calorific value (Anabtawi, MZ and Nazzal, JM), March, 175

Physical properties
Effect of composition of El-lajjun oil shale on its calorific value (Anabtawi, MZ and Nazzal, JM), March, 175

Pile fabrics
Objective evaluation of surface characteristics to determine smoothness of pile fabrics (Ajoyi, JO and Elder, HM), July, 388

Plastic pipes
Local strain in corrugated pipe: experimental measurements to test a numerical model (Moore, ID), March, 132

Plasticity
Numerical analysis of plasticity effects in the hole-drilling residual stress measurement (Beghini, M, Bertini, L, and Raffaelli, P), Nov., 522

Plastics
Development of an improved compression specimen geometry for unreinforced polymers (Odom, EM and Adams, DF), March, 104

Influence of test piece preparation on the compressive strength of unidirectional fiber-reinforced plastic (Häberle, JG and Matthews, FL), July, 360

Thermal and mechanical properties of cellular polystyrene and polyurethane insulation materials aged on a flat roof in hot-dry climate (Ozkan, E), March, 149

Poisson's ratio
Relevant errors associated with tension testing of metals (Tomesani, L), May, 212

Potential drop
Determining the potential drop calibration of a fatigue crack growth specimen subject to limited experimental observations (McKeighan, PC and Smith, DJ), July, 291

Preboard screening
Regulation: perception and reality (Laird, DR), May, 240

Prebonding processes
Preparation of stainless steel adherends for adhesive bonding (Gaskin, GB, Pilla, GJ, and Brown, SR), May, 222

Protective clothing
Comparision of selected properties of barrier textile materials used in durable, moisture repellent protective clothing (Slaten, BL, Shanley, LA, and Bellingar, T), Nov., 577

Q-R

Quality assurance
Differential air deflation quality assurance test for surgical gloves (Carey, RF), Sept., 440

***R*-curves**
R-curve generation and CTOD evaluation considering maximum crack growth size and parabolic crack front (Bhattacharya, S and Kumar, AN), Jan., 20

Recovery
Determination of softening kinetics in a material by measuring the evolution of hot flow stress (Field, DP, Sample, VM, and Rader, RS), Nov., 530

Recrystallization
Determination of softening kinetics in a material by measuring the evolution of hot flow stress (Field, DP, Sample, VM, and Rader, RS), Nov., 530

Reinforced composites
Bond tests of fiberglass-reinforced plastic bars in concrete (Larralde, J, Silva-Rodriguez, R, Burdette, J, and Harris, B), July, 351

Residual stress
Numerical analysis of plasticity effects in the hole-drilling residual stress measurement (Beghini, M, Bertini, L, and Raffaelli, P), Nov., 522

Resilient modulus
Determining asphalt concrete properties via the impact resonant method (Whitmoyer, SL and Kim, YR), March, 139

Roller
Objective evaluation of surface characteristics to determine smoothness of pile fabrics (Ajoyi, JO and Elder, HM), July, 388

Rubber
Testing techniques for measurement of bulk modulus (Fishman, KL and Machmer, D), March, 161

Runout measurements
Computer method of analysis for tire wear characterization, identification, and classification (Changizi, K), Jan., 45

S

Scanning tunneling microscope
Application of surface fabrication to strain measurement in nanometer scale with the scanning tunneling microscope (Miyahara, K, Matsuoka, S, Nagashima, N, and Masuda, H), March, 121

Scoring
Scoring of precision spur gears (Budinski, KG), Sept., 485

Scuffing
Scoring of precision spur gears (Budinski, KG), Sept., 485

Security systems
Australian system for aviation security identification cards and associated personnel background checking (Turner, R), May, 243

Aviation security standards development within ASTM Committee F-12 on Security Systems and Equipment (Draghetti, PM), May, 275

Development of trace explosive detection standards (Elias, L), May, 280

Enforcement of international regulations (Osmus, LA), May, 238

IATA and its cooperative role in aviation security (Wall, B), May, 257

International aviation security research and development (Polski, PA), May, 267

Introduction to the Sixth International Civil Aviaiton Security Conference (AVSEC'93) (Malotky, LO), May, 235

Need to harmonize cargo security rules (Forbes, D), May, 265

Reaching consensus on technical standards through ICAO: the work of ad hoc group of specialists on the detection of explosives (Cartwright, N), May, 277

Reconciling passenger facilitation and security (Joy, TJC), May, 245

Regulation: perception and reality (Laird, DR), May, 240

Role/responsibility of the freight forwarder (Koch, A), May, 259

Security technologies and techniques: airport security systems (Bouisset, J-F), May, 247

Selection and use of explosives detection devices to check hand-held luggage (Hnatnicky, S), May, 282

Standardized training through the use of the ICAO standardized training packages (STPs) (Sutherland, RG), May, 251

Sensitivity analysis
Behavior of wood in transverse compression (Pellicane, PJ, Bodig, J, and Mrema, AL), July, 383

Sequential batch extraction
Development and validation of a standard test method for sequential batch extraction of waste with acidic extraction fluid (Sorini, SS), March, 168

Shear stress state
Numerical model of primary creep deformation in a novel double shear specimen (Johnson, NL and Earthman, JC), March, 111

Shrinkage
Analysis of creep and shrinkage in mortars (Sickels Taves, LB), Nov., 548

Silicon nitride
Radial basis function network learns ceramic processing and predicts related strength and density (Cios, KJ, Baaklini, GY, Vary, A, and Tjia, RE), July, 343

Small scale models
Effect of overload cycles on thin steel roof claddings during cyclonic winds (Mahendran, M), Sept., 451

Small specimens
Dynamic fracture toughness measurements on small charpy specimens—a preliminary study (Sharpe, WN, Jr. and Böhme, W), Jan., 14

Solvent extraction method
Comparison of asphalt contents measured with the nuclear gage and extraction methods (Parker, F, Jr. and Wu, Y), Nov., 556

Specimen preparation
Evaluation of several techniques for measuring air-void content in asphalt concrete specimens (Harvey, J, Mills, T, Scheffy, C, Sousa, J, and Monismith, CL), Sept., 424

Influence of test piece preparation on the compressive strength of unidirectional fiber-reinforced plastic (Häberle, JG and Matthews, FL), July, 360

Sports equipment
Physiologic challenges induced by participation in ice hockey—implications for training (Green, HJ), Jan., 48

Square root of projection area
Instructions for a new method of inclusion rating and correlations with the fatigue limit (Murakami, Y, Toriyama, T, and Coudert, EM), July, 318

Stainless steel
Preparation of stainless steel adherends for adhesive bonding (Gaskin, GB, Pilla, GJ, and Brown, SR), May, 222

Static testing
Effect of high strain rate on the properties of PVC pipe (Al-Bastaki, NMS), Nov., 574

Steel roof claddings
Effect of overload cycles on thin steel roof claddings during cyclonic winds (Mahendran, M), Sept., 451

Steel weldments
Study of steel weldments using electronic speckle pattern interferometry (Sivaganthan, J, Ganesan, AR, Tan, BC, Low, KS, and Sirohi, RS), Jan., 42

Steels
Charpy transition studies of an embrittled AISI 8640 lower bainitic steel (Rinnovatore, JV, Lukens, KF, Reinhold, J, and Mahon, W), Nov., 517

Effect of overload cycles on thin steel roof claddings during cyclonic winds (Mahendran, M), Sept., 451

Study of steel weldments using electronic speckle pattern interferometry (Sivaganthan, J, Ganesan, AR, Tan, BC, Low, KS, and Sirohi, RS), Jan., 42

Stiffness
Local strain in corrugated pipe: experimental measurements to test a numerical model (Moore, ID), March, 132

Strain measurement
Application of surface fabrication to strain measurement in nanometer scale with the scanning tunneling microscope (Miyahara, K, Matsuoka, S, Nagashima, N, and Masuda, H), March, 121

Local strain in corrugated pipe: experimental measurements to test a numerical model (Moore, ID), March, 132

Strain rate
Behavior of asphalt concrete mixtures in triaxial compression (Tan, S-A, Low, B-H, and Fwa, T-F), May, 195

Constant temperature-compensated strain rate testing of aluminum (Sample, VM and Field, DP), March, 127

Strength
Radial basis function network learns ceramic processing and predicts related strength and density (Cios, KJ, Baaklini, GY, Vary, A, and Tjia, RE), July, 343

Stress correction
Stress correction for removal of material in X-ray stress determination (Kang, ZQ, Li, JB, and Wang, ZG), May, 217

Stress intensity
Influence of testing methodology on the fatigue crack propagation behavior of cellulose esters (Pecorini, TJ and Moskala, EJ), Sept., 420

Stress intensity factor
Suggested test procedure to measure Mixed Mode I-III fracture toughness of brittle materials (Kumar, AM, Hirth, JP, Hoagland, R, and Feng, X), July, 327

Stretch zone width
Fractographic technique for the estimation of initiation fracture toughness J_{Ic} for ductile materials (Srinivas, M, Kamat, SV, and Rao, PR), July, 302

Stylus
Objective evaluation of surface characteristics to determine smoothness of pile fabrics (Ajoyi, JO and Elder, HM), July, 388

Surgical materials
Differential air deflation quality assurance test for surgical gloves (Carey, RF), Sept., 440

T

Temperature
Behavior of asphalt concrete mixtures in triaxial compression (Tan, S-A, Low, B-H, and Fwa, T-F), May, 195

Constant temperature-compensated strain rate testing of aluminum (Sample, VM and Field, DP), March, 127

Temperature measurement
Temperature dependencies of elasticity characteristics for tellurium-alloyed gallium arsenide (Troyanskii, AI and Borisenko, VA), May, 233

Tension specimens
Crack length and *J*-integral expressions for specimens loaded in tension (Faucher, B), Jan., 30

Tension tests
Data acquisition and analysis of tensile properties for metal matrix composites (Roebuck, B, Lord, JD, Cooper, PM, and McCartney, LN), Jan., 63

Mechanical study of a hypoeutectoid steel weld (Martínez, JA, Kugler, HP, Merino, S, Drude, H, and Criado, AJ), Sept., 458

Relevant errors associated with tension testing of metals (Tomesani, L), May, 212

Testing
New restraint for high-load-transfer fastener fatigue test (Zhu, YG, Wu, XR, and Yang, YA), Jan., 81

Testing machines
Introduction to workshop on accuracy of load and strain measurement of testing machines (Perlov, A), Jan., 52

Textiles
Comparative studies of yarn and fabric friction (Ajayi, JO and Elder, HM), Sept., 463

Objective evaluation of surface characteristics to determine smoothness of pile fabrics (Ajoyi, JO and Elder, HM), July, 388

Theoretical solutions
Prediction of fatigue life of plain concrete beams from fracture tests (Ramsamooj, DV), May, 183

Thermal load
Temperature dependencies of elasticity characteristics for tellurium-alloyed gal-

lium arsenide (Troyanskii, AI and Borisenko, VA), May, 233

Thermosetting
Development of an improved compression specimen geometry for unreinforced polymers (Odom, EM and Adams, DF), March, 104

Threshold of stress intensity range
Use of fatigue specimens precracked in compression for measuring threshold values and crack growth (Pippan, R, Plöchl, L, Klanner, F, and Stüwe, HP), March, 98

Tires
Computer method of analysis for tire wear characterization, identification, and classification (Changizi, K), Jan., 45

Toughness
Suggested test procedure to measure Mixed Mode I-III fracture toughness of brittle materials (Kumar, AM, Hirth, JP, Hoagland, R, and Feng, X), July, 327

Trace explosives
Development of trace explosive detection standards (Elias, L), May, 280

Training
Security technologies and techniques: airport security systems (Bouisset, J-F), May, 247

Standardized training through the use of the ICAO standardized training packages (STPs) (Sutherland, RG), May, 251

Transition temperature
Charpy transition studies of an embrittled AISI 8640 lower bainitic steel (Rinnovatore, JV, Lukens, KF, Reinhoid, J, and Mahon, W), Nov., 517

Transverse compression
Behavior of wood in transverse compression (Pellicane, PJ, Bodig, J, and Mrema, AL), July, 383

Triaxial tests
Behavior of asphalt concrete mixtures in triaxial compression (Tan, S-A, Low, B-H, and Fwa, T-F), May, 195

U-V

Ultra-low load hardness
Estimation of Young's modulus and of hardness by ultra-low load hardness tests with a Vickers indenter (Trindade, AC, Cavaleiro, A, and Fernandes, JV), July, 365

Uniaxial tension tests
Uniaxial tensile strength of cementitious composites (Toutanji, HA and El-Korchi, T), May, 226

Unplastisized polyvinyl chloride
Effect of high strain rate on the properties of PVC pipe (Al-Bastaki, NMS), Nov., 574

Unreinforced polymers
Development of an improved compression specimen geometry for unreinforced polymers (Odom, EM and Adams, DF), March, 104

Verification
Practical aspects of dynamic verification of extensometers: Part I—The concepts (Albright, FJ and Annala, J), Jan., 53

Practical aspects of dynamic verification of extensometers: Part II—Actual examples (Albright, FJ and Annala, J), Jan., 58

Vibration
Excitation system for dynamic testing of large structures (Salawu, OS and Williams, C), July, 370

Vickers hardness
Estimation of Young's modulus and of hardness by ultra-low load hardness tests with a Vickers indenter (Trindade, AC, Cavaleiro, A, and Fernandes, JV), July, 365

W

Waste disposal
Development and validation of a standard test method for sequential batch extraction of waste with acidic extraction fluid (Sorini, SS), March, 168

Wear
Computer method of analysis for tire wear characterization, identification, and classification (Changizi, K), Jan., 45

Introduction to the symposium on case studies of wear-related failure analyses (Wood, FW), Sept., 468

On the role and analysis of wear in failures (Wood, FW), Sept., 470

Scoring of precision spur gears (Budinski, KG), Sept., 485

Wear analysis of Björk Shiley Delrin tilting disc heart valves (Milligan, HL, Johnson, BM, and Engel, PA), Sept., 474

Wear-related fatigue in a wire rope failure (Schrems, KK), Sept., 490

Welding
Mechanical study of a hypoeutectoid steel weld (Martínez, JA, Kugler, HP, Merino, S, Drude, H, and Criado, AJ), Sept., 458

Wire insulation
Effects of sample and test variables on electrical wire insulation flammability (Rodak, EM, Taylor, RJ, Hirsch, DB, and Linley, LJ), Sept., 447

Wire rope
Wear-related fatigue in a wire rope failure (Schrems, KK), Sept., 490

Wood
Behavior of wood in transverse compression (Pellicane, PJ, Bodig, J, and Mrema, AL), July, 383

Modeling wood in transverse compression (Pellicane, PJ, Bodig, J, and Mrema, AL), July, 376

X-Y

X-ray stress determination
Stress correction for removal of material in X-ray stress determination (Kang, ZQ, Li, JB, and Wang, ZG), May, 217

Yarns
Comparative studies of yarn and fabric friction (Ajayi, JO and Elder, HM), Sept., 463

Young's modulus
Data acquisition and analysis of tensile properties for metal matrix composites (Roebuck, B, Lord, JD, Cooper, PM, and McCartney, LN), Jan., 63

Temperature dependence of dynamic Young's modulus and mechanical damping in a Nextel fiber-reinforced glass composite (Wolfenden, A, Gill, JE, Chawla, KK, Vaidya, RU, and Venkatesh, R), Nov., 571